

Wyoming Air Guard Firefighters' Retirement System

Actuarial Valuation Report
for the Year Beginning January 1, 2018



April 6, 2018

Board of Trustees

Wyoming Air Guard Firefighters Retirement System

6101 Yellowstone Road

Suite 500

Cheyenne, WY 82002

Dear Board of Trustees:

Subject: Actuarial Valuation as of January 1, 2018

We are pleased to present the report of the actuarial valuation of the Wyoming Air Guard Firefighters Retirement System (“the Fund”) for the plan year commencing January 1, 2018. This report describes the current actuarial condition of the Fund, determines the calculated employer contribution rate (the actuarially determined contribution rate), and analyzes changes in this contribution rate from the prior year. Valuations are prepared annually, as of January 1, the first day of the Fund’s plan year.

Financing objectives and funding policy

The purpose of this actuarial valuation is to determine whether or not the contributions are sufficient to meet the obligations of the Fund. A portion of the funding comes from Federal funding of 9.65% of payroll; to the extent that this funding ceases, the cost of the plan may change.

Progress toward realization of financing objectives

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan’s funded status. The funded ratio as of January 1, 2018 is 85.03% compared to 87.21% as of January 1, 2017. This funded ratio is based on the assumption that no future cost-of-living increases will be paid. On a market value of assets basis, the funded ratio is 85.62% as of January 1, 2018 and 82.51% as of January 1, 2017. The funded status alone is not appropriate for assessing the need for future contributions. The funded status is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

Benefit provisions

The benefit provisions reflected in this valuation are those which were in effect on January 1, 2018. W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change. Therefore, this valuation does not include any liability for future cost-of-living increases. There were no changes to benefit provisions since the prior valuation.

The benefit provisions are summarized in Appendix B of the report.

Assumptions and methods

Actuarial assumptions and methods are set by the Board, based upon recommendations made by the plan's actuary. The current assumptions used in the actuarial valuation were adopted by the Board effective August 23, 2017 and were first utilized with the January 1, 2018 valuation report. For a detailed description of the experience related to these assumptions, as well as the rationale for any changes, please see our latest Wyoming Retirement System Actuarial Experience Study Report. Our experience study report was dated January 10, 2018 and it covered the five-year investigation period ending December 31, 2016.

Below is a summary of the changes in assumptions:

1. **Inflation:** reduce the current assumption of 3.25% to 2.25%.
2. **Real rate of return:** increase the current assumption from 4.50% to 4.75%.
3. **Nominal rate of return:** decrease the nominal investment return assumption (the sum of inflation and the real rate of return) from 7.75% to 7.00%.
4. **Wage inflation:** reduce the wage inflation assumption from 4.25% to 2.50%.
5. **Payroll growth:** reduce the assumed growth in total payroll from 4.25% to 2.50%.
6. **Administrative expenses:** recommend reducing the assumed annual increase in expenses from 6.50% per year to 2.50%.
7. **Post-retirement mortality, disabled lives mortality, active life mortality:** update to the RP2014 table, projected generationally using MP 2017.
8. **Salary increase:** decrease the assumed salary increases and to move from age-based merit and promotion increases to service-based merit and promotion increases.
9. **Retirement (unreduced retirement):** Increase the assumed final age of employment from 70 to 80 and modify the retirement rates to reflect actual experience.
10. **Early (reduced) retirement:** modify the retirement rates to reflect actual experience.
11. **Termination (withdrawal):** adjust rates to reflect observed experience.

The assumption changes increased the accrued liability by \$327,140.



The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations presented in the report are intended to provide information for rational decision making.

The 7.12% employer contribution and the 16.65% employee contribution are the rates that comply with State law. Due to the many factors affecting a retirement system, users of this report should be aware that contributions made at that rate do not necessarily guarantee long-term benefit security.

The employer contribution requirement in Table 1 of this report is determined using the actuarial assumptions and methods disclosed in Appendix A of this report. This report does not include a detailed assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of investment and other significant risks that may have a material effect on the plan's financial condition.

All assumptions and methods are described in Appendix A of the report.

Data

Member data for all members was supplied as of January 1, 2018 by the Fund's staff. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data.

Asset and financial information as of January 1, 2018 was prepared by Wyoming Retirement System and is the responsibility of management. Eide Bailly, LLP provided us the asset and financial information and will opine on Wyoming Retirement System's statements.

Plan experience

As part of each valuation, we examine the Fund's experience relative to the assumptions. As experience in a given year deviates from the assumptions, a gain occurs if the liabilities grow slower than the assumption set anticipates and a loss occurs if the liabilities grow faster. This past fiscal year the Fund had a total experience loss of \$42,448. The aggregate results of these analyses are disclosed in Tables 4 and 5 under Section III of the report.

Actuarial certification

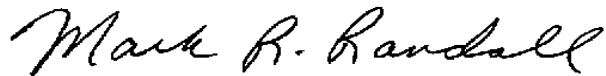
All of the tables contained in this actuarial valuation report were prepared by Gabriel, Roeder, Smith & Company. We certify that the information presented herein is accurate and fairly portrays the actuarial position of the Fund as of January 1, 2018.



All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of state law and, where applicable, the Internal Revenue Code and ERISA. The undersigned are independent actuaries and consultants. Mark Randall and Leslie Thompson are Enrolled Actuaries and Mark Randall, Leslie Thompson, and Paul Wood are Members of the American Academy of Actuaries, and all three meet all the Qualification Standards of the American Academy of Actuaries.

Finally, all of the undersigned are experienced in performing valuations for large public retirement systems.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



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SECTION I

EXECUTIVE SUMMARY

Executive Summary

Item	January 1, 2018	January 1, 2017
	No COLA	No COLA
1. Contributions:		
a. Total normal cost	13.32%	14.05%
b. Employee contributions	(16.65%)	(16.65%)
c. Net employer normal cost	(3.33%)	(2.60%)
d. Amortization payment	3.55%	2.60%
e. Administrative expenses	0.31%	0.29%
f. Required contribution	0.53%	0.29%
g. Statutory contribution	(7.12%)	(7.12%)
h. Shortfall/(surplus)	(6.59%)	(6.83%)
2. Funding Elements:		
a. Market value of assets (MVA)	\$7,462,397	\$6,434,416
b. Actuarial value of assets (AVA)	\$7,411,093	\$6,800,719
c. Actuarial accrued liability (AAL)	\$8,715,990	\$7,798,108
d. Unfunded/(overfunded) actuarial accrued liability	\$1,304,897	\$997,389
3. Contributions and Ratios:		
a. Annual required contribution	\$11,590	\$6,011
b. Actual contributions	N/A	156,268
i. Employer	N/A	156,263
ii. Other	N/A	5
c. Percentage contributed	N/A	2599.70%
d. Funded ratio on an actuarial basis (AVA/AAL)	85.03%	87.21%
e. Funded ratio on a market basis (MVA/AAL)	85.62%	82.51%
f. Projected valuation payroll	\$2,208,407	\$2,059,595

SECTION II

DISCUSSION

Contribution Requirements

- Exhibits throughout this report are based primarily, unless stated otherwise, on the assumption of no future cost-of-living adjustments (COLAs).
- W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change. The actuarial value funded ratio is 85.03% and the market value funded ratio is 85.62%.
- As shown in the Executive Summary, the most significant factor in the decrease in the “bottom line” contribution requirements this year was due to contributions in excess of what was required.
- There were no changes in the benefit provisions since the prior valuation.
- The actuarial assumptions have been updated since the prior valuation. For a detailed description of the experience related to these assumptions, as well as the rationale for any changes, please see our latest Wyoming Retirement System Actuarial Experience Study Report.
- The amortization payment is based upon the following assumptions:
 - 30-year closed layered funding period
 - Amortization payment amounts are calculated in such a way that they will increase as a level percentage of payroll
 - Total payroll increases assumed at 2.50% per year, and
 - Future growth in the number of active members is not reflected in the annual valuation
- The analysis of the changes in the contribution rates is shown in Table 5 under Section III of the report.
- The calculated funding period assuming the current statutory contribution of 7.12% of pay is 6.8 years.

Calculation of Contribution Rates

The funds available to pay benefits come from two sources, contributions and investment income on those contributions (the majority of the funds available to pay benefits typically come from investment income). The Fund receives contributions from two sources, employer contributions and member contributions, which are both determined as a percentage of pay. As shown in Table 1 under Section III of the report, the employer contribution rate has three components:

- The normal cost percentage (NC%)
- The amortization percentage (UAAL%)
- The administrative expenses

The NC% is the theoretical amount which would be required to pay the members' benefits if this amount had been contributed from each member's entry date and if the fund's experience exactly followed the actuarial assumptions. The NC% is shown in Table 3 under Section III of the report.

Members are required to make employee contributions and only the excess of the NC% over the member contribution rate is included in the employer contribution rate.

The actuarial accrued liability (AAL) is the difference between (i) the actuarial present value of all future benefits for all current participants of the fund, including active, inactive and retired members, and (ii) the actuarial present value of future normal costs. Thus, the AAL represents the liability associated with past years. The unfunded actuarial accrued liability (UAAL) is the difference between the AAL and the actuarial value of assets (AVA). It is the shortfall/excess between the liability associated with prior years (the AAL) and the assets actually accumulated (the AVA). This shortfall/excess can arise from several sources, including actuarial gains and losses which are caused by differences between actual experience and the plan's assumptions, changes to the plan's actuarial assumptions, and amendments to the benefit provisions.

The UAAL% is the amount required to fund this difference. It is the amount, expressed as a level percentage of payroll, necessary to amortize the UAAL. This amortization is over a period of 30 years beginning January 1, 2018. The Executive Summary shows the UAAL%, called Amortization Payment, compared to that of last year.

Administrative expenses are the average of the actual expenses for the prior two years, with each year projected at 2.50% to the valuation date.

The calculated rate is used in determining the contributions necessary to meet the Actuarially Determined Contribution for the twelve-month period beginning January 1, 2018. Note, however, that the employer contribution is set at 7.12% of payroll. Therefore, the Actuarially Determined Contribution will be fully contributed. This is detailed in the Executive Summary.

Financial Data and Experience

As of January 1, 2018, the Fund has a total market value of \$7.5 million. Financial information was received from Eide Bailly, LLP.

Table 7 under Section III of the report shows a reconciliation of the market values between the beginning and end of 2017.

During 2017, the total investment return on the market value of assets (MVA), as reported by Meketa Investment Group, Inc., was 14.20%, as shown in Table 10 under Section III of the report.

In determining the contribution amounts and funded status of the Fund, an actuarial value of assets (AVA) is used rather than the market value of assets. The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (or less than) expected investment income. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

The development of the AVA is shown in Table 9 under Section III of the report. The AVA is \$7.4 million. The AVA is 99.31% of the MVA as of December 31, 2017, compared to 105.69% last year. The difference between the AVA and the MVA is deferred gains and losses. As of January 1, 2018, the total deferred gain was \$51,304 and as of January 1, 2017, the total deferred loss was \$366,303.

In addition to the market return, Table 10 also shows the return on the actuarial value of assets for the Fund. For 2017, this return was 7.06%. Since this return is less than the assumed 7.75% investment return for the prior year, an actuarial loss occurred increasing the unfunded actuarial accrued liabilities of the Fund by \$47,431 as shown in Table 4.

Member Data

Member data as of January 1, 2018 was supplied electronically by the Fund's staff. While we did not audit this data, we did perform various tests to ensure that it was internally consistent, consistent with the prior year's data, and was reasonable overall.

Table 15 under Section III of the report shows the number of members by category (active, inactive, retired, etc.) along with member statistics. Tables 16 through 23 show summaries of certain historical data and include membership statistics.

Of the 38 active participants, 4 are eligible or will become eligible for normal retirement and 2 are eligible or will become eligible for early retirement in 2018.

The average of the final average salaries for participants who retired or became disabled this year is \$89,657.

Total active member payroll increased 7.23% last year; the number of active members increased from 35 to 38.

This change in payroll is significant because the methodology used in the valuation to amortize the unfunded actuarial accrued liability assumes a growing payroll into the future. If the payroll does not grow at the assumed 2.50% per year average, then the current amortization payments may be understated and the funding position of the Fund will not strengthen as assumed over time. Higher than expected payroll growth, however, has the opposite effect and the funded position of the Fund should trend to 100%. Table 5 under Section III of the report shows, for the past year, payroll for the plan increased more than expected, so the effect is a decrease in the calculated contribution rate of 0.16% of payroll.

Benefit Provisions

Appendix B of the report includes a more detailed summary of the benefit provisions for the Fund. A brief summary is as follows:

- *Normal Retirement Eligibility*
 - Age 60 with four or more years of service, or age 50 with 25 or more years of service.
- *Normal Retirement Benefit*
 - 2.50% of employee's Final Average Salary for each year of credited service. This amount is reduced by 5.0% per year that the employee is under age 60. However, members who are at least age 55 retiring with a combined age and service of at least 75 receive an unreduced benefit.
- *Normal Form of Payment*
 - Monthly benefit for life with a lump-sum death benefit equal to the excess (if any) of the employee contributions with interest over the total benefits received.
- *Employee Contributions* are required
 - 16.65% of pay.
- *Post-retirement Cost-of-Living Adjustments (COLAs)*
 - W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change.

There were no changes in the benefit provisions since the prior valuation.

Actuarial Methods and Assumptions

Appendix A of the report includes a summary of the actuarial assumptions and methods used in this valuation. A few highlights are listed as follows:

- Costs are determined using the Entry Age Normal actuarial cost method, calculated as a level percentage of payroll.
- The unfunded actuarial accrued liability is amortized over a closed 30 year period as a level percent of payroll.
- The assumed annual investment return rate is 7.00%, with assumed inflation of 2.25%.
- Payroll is assumed to increase at 2.50% per year.
- Inactive vested participants are assumed to retire at age 60 or on the valuation date if over age 60.
- No benefit data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.

The average future lifetime for current pensioners is 24.1 years.

The actuarial assumptions and methods were reviewed in detail as part of the 2017 Experience Study covering the five year period ending December 31, 2016. Please see Appendix A for a summary of the new assumptions.

GASB and Funding Progress

Governmental Accounting Standards Board Statement Number 67 (GASB 67) contains certain accounting requirements for the Fund. Schedules, notes and required supplementary information are provided under separate cover.

SECTION III

SUPPORTING EXHIBITS

Table 1
Calculation of Annual Required Contribution Rate
(Assumes No Future Cost-Of-Living Increases)

Item	January 1, 2018	January 1, 2017
1. Projected valuation payroll	\$2,208,407	\$2,059,595
2. Present value of future pay	\$18,049,537	\$18,613,096
3. Employer normal cost rate	(3.33%)	(2.60%)
4. Actuarial accrued liability for active members		
a. Present value of future benefits for active members	\$6,244,560	\$6,274,775
b. Less: present value of future employer normal costs	636,474	529,737
c. Less: present value of future employee contributions	(3,005,248)	(3,099,081)
d. Actuarial accrued liability	\$3,875,786	\$3,705,431
5. Total actuarial accrued liability for:		
a. Retirees and beneficiaries	\$3,972,611	\$3,330,687
b. Disabled members	478,422	412,309
c. Inactive members	389,171	349,681
d. Active members (Item 4d)	3,875,786	3,705,431
e. Total	\$8,715,990	\$7,798,108
6. Actuarial value of assets (Table 9)	\$7,411,093	\$6,800,719
7. Unfunded actuarial accrued liability (UAAL) (Item 5e - Item 6)	\$1,304,897	\$997,389
8. UAAL amortization period	30 years	30 years
9. Assumed payroll growth rate	2.50%	4.25%
10. Employer contribution requirement		
a. UAAL amortization payment as % of pay	3.55%	2.60%
b. Employer normal cost	-3.33%	-2.60%
c. Administrative expense	0.31%	0.29%
d. Contribution requirement (a + b + c)	0.53%	0.29%

Table 2
Cost Breakdown
(Assumes No Future Cost-Of-Living Increases)

Item	Present Value of Future Normal Costs (1)	Actuarial Accrued Liabilities (2)	Total Present Value of Benefits (3) = (1) + (2)
Age and service allowances based on total service and disability benefits likely to be rendered by present active members	\$1,610,847	\$3,767,558	\$5,378,405
Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion)	59,915	116,060	175,975
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members	698,012	(7,832)	690,180
Benefits likely to be paid to vested inactive members	0	372,919	372,919
Benefits to be paid to members due refunds	0	16,252	16,252
Benefits to be paid to current retirees, disabled members, beneficiaries, and future beneficiaries of current retirees	0	4,451,033	4,451,033
Total	\$2,368,774	\$8,715,990	\$11,084,764
Actuarial value of assets	0	7,411,093	7,411,093
Liabilities to be covered by future contributions	\$2,368,774	\$1,304,897	\$3,673,671

Table 3

History of Total Normal Cost

Fiscal Year Ending December 31 (1)	Normal Cost as Percent of Payroll (2)
2011	13.90%
2012	13.75%
2013	14.02%
2014	15.30%
2015	14.95%
2016	15.04%
2017	14.05%
2018	13.32%

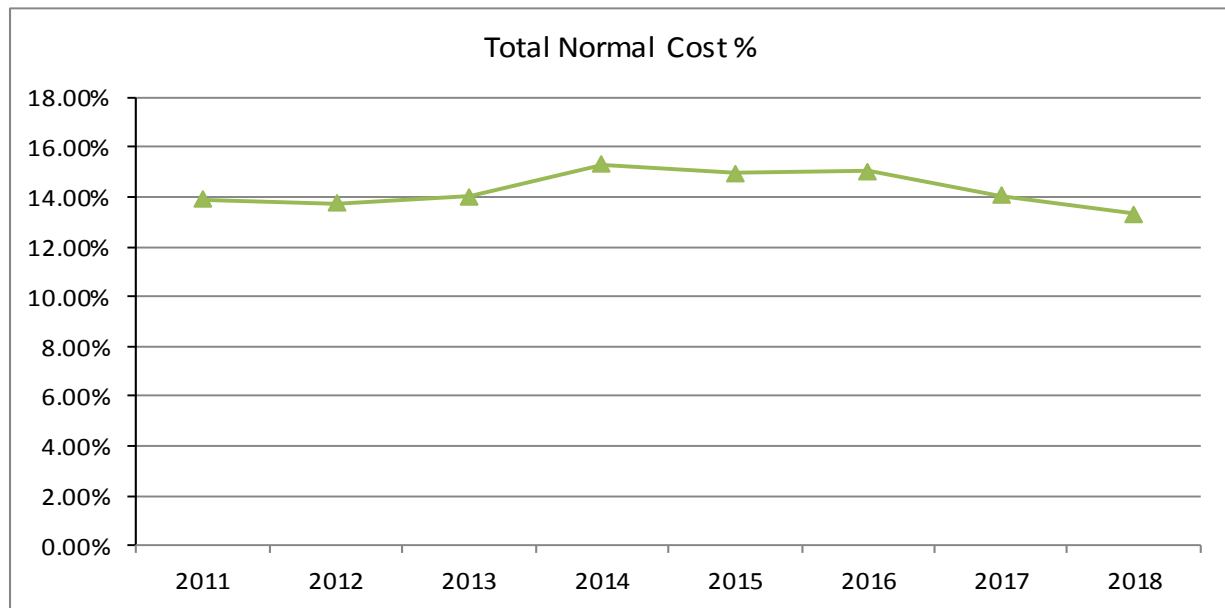


Table 4

Calculation of Total Actuarial Gain/(Loss)

(Assumes No Future Cost-Of-Living Increases)

Item	January 1, 2018
1. Derivation of Experience Gain/(Loss)	
a. Unfunded actuarial accrued liability (UAAL) - previous valuation	\$997,389
b. Normal cost (NC) for fiscal year ending December 31, 2017	289,452
c. Actual administrative expenses for fiscal year ending December 31, 2017	7,033
d. Actuarially determined contribution for fiscal year ending December 31, 2017	348,934
e. Interest accrual:	
(i) For whole year on (a)	77,298
(ii) For half year on (b) + (c) - (d)	(2,032)
(iii) Total interest: (e)(i) + (e)(ii)	75,265
f. Change in UAAL due to plan changes	-
g. Change in UAAL due to assumption change	327,140
h. Expected UAAL current year: (a) + (b) + (c) - (d) + (e)(iii) + (f) + (g)	1,347,345
i. Actual UAAL current year	1,304,897
j. Experience gain/(loss): (h) - (i)	42,448
k. Experience gain/(loss) as a % of actuarial accrued liability	0.49%
2. Approximate portion of gain/(loss) due to investments (at actuarial value)	(\$47,431)
3. Approximate portion of gain/(loss) due to contributions higher or lower than expected	\$181,588
4. Approximate amount of gain/(loss) due to liabilities: (1)(j) - (2) - (3)	(\$91,709)
a. Age & service retirements	(12,854)
b. Disability retirements	989
c. Death-In-service	2,501
d. Withdrawal from employment	(87,902)
e. Rehires	-
f. Pay increases	46,554
g. Death after retirement	(15,417)
h. Other	(25,579)
i. Other as a % of actuarial accrued liability	-0.29%

Table 5**Change in Calculated Contribution Rate Since the Prior Valuation****(Assumes No Future Cost-Of-Living Increases)**

Item	January 1, 2018
1. Calculated contribution rate as of January 1, 2017	0.29%
2. Change in contribution rate during year	
a. Change in employer normal cost	-0.06%
b. Assumption changes	0.58%
c. Actuarial (gain) loss from investments on actuarial value of assets	0.12%
d. Actuarial (gain) loss from liability sources and administrative expenses	0.28%
e. Difference between contributions made and required contributions	-0.46%
f. Effect of payroll growing (faster)/slower than assumption	-0.16%
g. Open amortization period reset to 30 years	-0.06%
h. Other changes	0.00%
i. Total change	0.24%
3. Calculated contribution rate as of January 1, 2018	0.53%

Table 6
Statement of Plan Net Assets

Assets at Market Value		
Item	FYE 2017	FYE 2016
1. Cash and Cash Equivalents (Operating Cash)	\$584,402	\$646,357
2. Receivables		
a. Insurance premium tax	\$0	\$0
b. Buy backs	0	0
c. Employee contributions	0	30,018
d. Employer contributions	0	12,837
e. Securities sold	32,439	34,807
f. Accrued interest and dividends	10,974	11,528
g. Currency contract receivable	1,677,244	2,337,170
h. Other	4,092	0
i. Rebate and fee income receivable	0	0
j. Total Receivables	<u>\$1,724,749</u>	<u>\$2,426,360</u>
3. Investments, at Fair Value	\$7,368,344	\$6,081,268
4. Liabilities		
a. Benefits and refunds payable	\$0	(\$16,280)
b. Accrued payroll taxes and deductions	0	0
c. Securities purchased	(43,200)	(22,781)
d. Administrative and consulting fees payable	(15,343)	(7,192)
e. Currency contract payable	(1,685,397)	(2,314,712)
f. Securities lending collateral	<u>(\$471,158)</u>	<u>(\$358,604)</u>
g. Total Liabilities	<u>(2,215,098)</u>	<u>(2,719,569)</u>
5. Total Market Value of Assets Available for Benefits	<u>\$7,462,397</u>	<u>\$6,434,416</u>

Table 7
Reconciliation of Plan Net Assets

Assets at Market Value		
Item	FYE 2017	FYE 2016
A. Market Value of Assets at Beginning of Year	\$6,434,416	\$6,198,550
B. Contribution Income:		
1. Contributions		
a. Employee	\$367,480	\$319,829
b. Employer	156,263	136,768
c. Other	5	56,856
d. Total	<u>\$523,748</u>	<u>\$513,453</u>
2. Investment Income		
a. Interest, dividends, and other income	\$128,014	\$127,074
b. Net appreciation	835,844	331,817
c. Investment expenses	<u>(63,542)</u>	<u>(29,789)</u>
d. Net investment income	\$900,316	\$429,102
3. Securities Lending		
a. Gross income	\$6,111	\$2,781
b. Deductions	<u>(4,318)</u>	<u>(840)</u>
c. Net investment income	\$1,793	\$1,941
4. Benefits and Refunds		
a. Refunds	(\$39,723)	(\$411,989)
b. Regular monthly benefits	<u>(351,120)</u>	<u>(290,609)</u>
c. Total	(\$390,843)	(\$702,598)
5. Administrative and miscellaneous expenses	(\$7,033)	(\$6,032)
C. Market Value of Assets at End of Year	\$7,462,397	\$6,434,416

Table 8
Progress of Fund Through December 31, 2017

Plan Year Ending December 31	Employer Contributions*	Employee Contributions	Administrative Expenses	Net Investment Income**	Benefit Payments	Transfers	Actuarial Value of Assets
Total	\$ 1,125,805	\$ 2,353,236	\$ (35,552)	\$ 2,699,708	\$ (1,770,090)	\$ -	
2010	\$ 64,059	\$ 60,716	\$ (2,202)	\$ 270,234	\$ (192,167)	\$ -	\$ 3,238,626
2011	103,373	241,333	(3,383)	207,538	(36,785)	-	3,750,702
2012	230,795	256,054	(2,899)	258,394	(43,474)	-	4,449,572
2013	132,641	310,179	(4,718)	375,914	(88,727)	-	5,174,861
2014	143,582	335,763	(4,372)	405,599	(126,427)	-	5,929,006
2015	158,319	405,026	(4,913)	318,585	(189,069)	-	6,616,954
2016	136,768	376,685	(6,032)	378,942	(702,598)	-	6,800,719
2017	156,268	367,480	(7,033)	484,502	(390,843)	-	7,411,093

* Employer contributions include other funding sources and employee contributions may include member redeposits and member service purchase contributions

** Net of investment expenses

Table 9
Development of Actuarial Value of Assets

Item	FYE 2017	FYE 2016
1. Actuarial value of assets, beginning of year (without corridor)	\$6,800,719	\$6,616,954
2. Market value, end of year	\$7,462,397	\$6,434,416
3. Market value, beginning of year	\$6,434,416	\$6,198,550
4. Non-investment/administrative net cash flow:		
a. Employee contributions	\$367,480	\$319,829
b. Employer contributions	156,263	136,768
c. Other contributions	5	56,856
d. Refund of employee accounts	(39,723)	(411,989)
e. Retirement benefits	(351,120)	(290,609)
f. Administrative expenses	(7,033)	(6,032)
g. Total net cash flow: [sum of (4a) through (4f)]	\$125,872	(\$195,177)
5. Investments and securities lending:		
a. Interest and dividends on investments	\$128,014	\$127,074
b. Gross income from securities lending	6,111	2,781
c. Fees and expenses	(67,860)	(30,629)
d. Total net income: [sum of (5a) through (5c)]	\$66,265	\$99,226
6. Investment income:		
a. Actual market return: (2) - (3) - (4g) - (5d)	\$835,844	\$331,817
b. Assumed rate of return	7.75%	7.75%
c. Assumed amount of return	437,189	373,740
d. Amount subject to phase-in: (6a) - (6c)	\$398,655	(\$41,923)
7. Phase-in recognition of investment income:		
a. Current year: 0.20 * (6d)	\$79,731	(\$8,385)
b. First prior year	(8,385)	(105,103)
c. Second prior year	(105,103)	(32,263)
d. Third prior year	(32,263)	47,068
e. Fourth prior year	47,068	39,032
f. 2012 market value adjustment not previously recognized	-	(34,373)
g. Total recognition	(\$18,952)	(\$94,024)
8. Actuarial value of assets, end of year		
a. Preliminary actuarial value of assets, end of year:		
(1) + (4g) + (5d) + (6c) + (7g)	\$7,411,093	\$6,800,719
b. Upper corridor limit: 120% * (2)	8,954,876	7,721,299
c. Lower corridor limit: 80% * (2)	5,969,917	5,147,533
d. Actuarial value of assets, end of year	\$7,411,093	\$6,800,719
9. Difference between market and actuarial value of assets	\$51,304	(\$366,303)
10. Actuarial rate of return	7.06%	5.81%
11. Market rate of return*	14.20%	7.60%
12. Ratio of actuarial value to market value of assets	99.31%	105.69%

* Current year market rate of return is based on unaudited data and is supplied by the plan's investment consultant.

Table 10

History of Investment Returns

Plan Year (1)	Market (2)	Actuarial (3)
2010	13.80%	9.00%
2011	-0.90%	6.12%
2012	14.05%	6.51%
2013	13.53%	8.13%
2014	4.70%	7.58%
2015	-0.26%	5.21%
2016	7.60%	5.81%
2017	14.20%	7.06%

Average returns:

Last five years:	7.82%	6.75%
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The market returns above are gross of investment expenses and were provided by the plan's investment consultant. The actuarial returns above are based on the financial information provided by the plan's auditors.

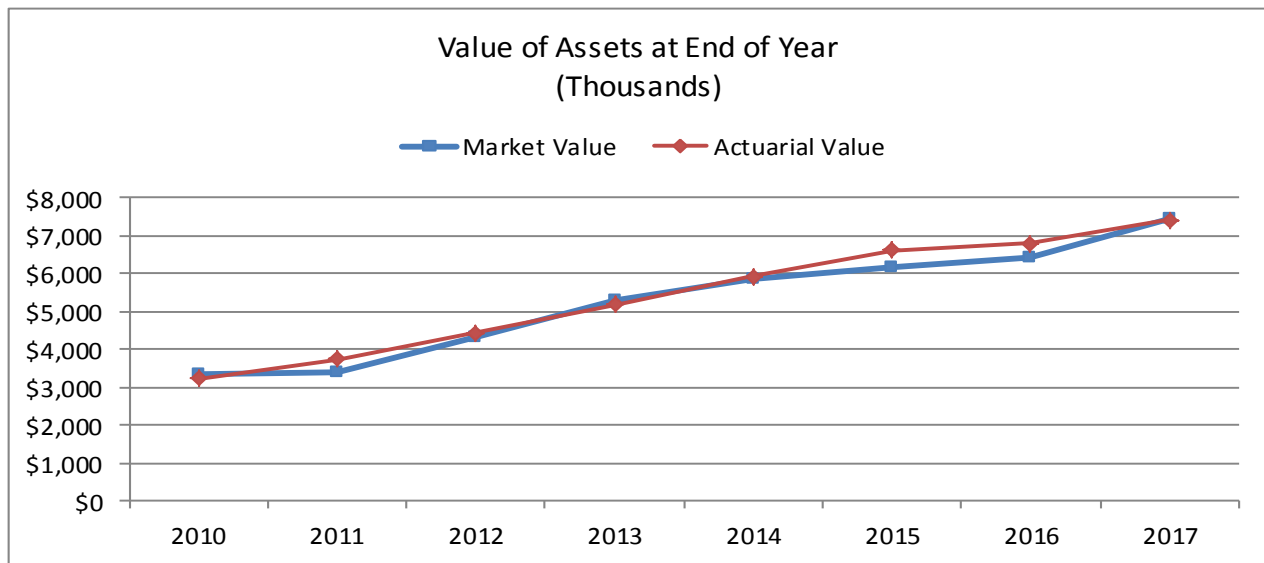


Table 11
Solvency Test

Valuation Date January 1	Total Active Member Contributions (1)	Inactive and Pensioner Liability (2)	Employer Financed Active Accrued Liability (3)	Actuarial Value of Assets	Percentage of Liabilities Covered by Assets		
					(1)	(2)	(3)
2011	\$2,315,540	\$651,812	\$1,224,849	\$3,238,626	100%	100%	22%
2012	2,691,205	570,660	1,118,985	3,750,702	100%	100%	44%
2013	3,102,424	553,829	1,195,992	4,449,572	100%	100%	66%
2014	3,290,382	1,002,630	1,511,749	5,174,861	100%	100%	58%
2015	3,550,851	1,875,850	1,184,710	5,929,006	100%	100%	42%
2016	3,715,740	2,483,877	1,137,107	6,616,954	100%	100%	37%
2017	2,973,289	4,092,677	732,142	6,800,719	100%	94%	0%
2018	3,140,818	4,840,204	734,968	7,411,093	100%	88%	0%

Table 12
Schedule of Funding Progress

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Valuation Date January 1	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL) [(3) - (2)]	Funded Ratio [(2)/(3)]	Covered Payroll	UAAL as a Percentage of Covered Payroll [(4)/(6)]
2011	\$3,238,626	\$4,192,201	\$953,575	77.25%	\$1,499,381	63.60%
2012	3,750,702	4,380,850	630,148	85.62%	1,522,749	41.38%
2013	4,449,572	4,852,245	402,673	91.70%	1,866,393	21.57%
2014	5,174,861	5,804,761	629,900	89.15%	1,805,329	34.89%
2015	5,929,006	6,611,411	682,405	89.68%	2,214,578	30.81%
2016	6,616,954	7,336,724	719,770	90.19%	2,243,456	32.08%
2017	6,800,719	7,798,108	997,389	87.21%	2,059,595	48.43%
2018	7,411,093	8,715,990	1,304,897	85.03%	2,208,407	59.09%

Table 13

Schedule of Contributions from the Employer(s) and Other Contributing Entities

(1)	(2)	(3)	(4)	(5)	(6)
Fiscal Year Ending December 31	Actuarially Determined Contribution		Employer Contributions*		Percentage of Actuarially Determined Contribution Contributed [(5)/(3)]
	% of Payroll	Amount	% of Payroll	Amount	
2011	0.81%	\$12,109	6.89%	\$103,373	853.69%
2012	(0.48%)	(7,270)	15.16%	230,795	(3,174.45%)
2013	(1.28%)	(23,938)	7.11%	132,641	(554.10%)
2014	0.75%	13,694	7.95%	143,582	1,048.52%
2015	0.18%	3,987	7.15%	158,319	3,970.65%
2016	0.34%	7,634	6.10%	136,768	1,791.66%
2017	0.29%	6,011	7.59%	156,268	2,599.80%
2018	0.53%	11,590	-	-	-

* Includes other funding sources but excludes member redeposits and member service purchase contributions.

Table 14
Reconciliation of Participant Data

	Active Participants	Vested Former Participants	Retired Participants	Disabled	Beneficiaries	Participants Due Refunds	Total
Number as of January 1, 2017	35	2	8	1	-	3	49
New participants	7	-	-	-	-	-	7
Vested terminations	(1)	1	-	-	-	-	-
Retirements	(1)	-	1	-	-	-	-
Disability	-	-	-	-	-	-	-
Deceased with beneficiary	-	-	-	-	-	-	-
Deceased without beneficiary	-	-	-	-	-	-	-
Due refunds	-	-	-	-	-	-	-
Lump sum payoffs	(2)	-	-	-	-	(1)	(3)
Rehires/return to active	-	-	-	-	-	-	-
Certain period expired	-	-	-	-	-	-	-
Reclassifications	-	-	-	-	-	-	-
Data corrections	-	-	-	-	-	-	-
Number as of January 1, 2018	38	3	9	1	-	2	53

Table 15
Demographic Statistics

	January 1		
	2018	2017	Change
<u>Active Participants</u>			
Number	38	35	8.6%
<i>Vested</i>	20	19	
<i>Not vested</i>	18	16	
Average age (years)	36.98	36.80	0.5%
Average service (years)	7.68	7.93	-3.2%
Average entry age (years)	29.30	28.87	1.5%
Total payroll*	\$2,208,407	\$2,059,595	7.2%
Average payroll*	\$58,116	\$58,846	-1.2%
Total employee contributions with interest	\$3,140,818	\$2,973,289	5.6%
Average employee contributions with interest	\$82,653	\$84,951	-2.7%
<u>Vested former participants</u>			
Number	3	2	50.0%
Average age (years)	41.57	45.62	-8.9%
Total employee contributions with interest	\$372,919	\$313,293	19.0%
Average employee contributions with interest	\$124,306	\$156,647	-20.6%
<u>Service Retirees</u>			
Number	9	8	12.5%
Average age (years)	61.86	60.96	1.5%
Total annual benefits	\$324,113	\$291,369	11.2%
Average annual benefit	\$36,013	\$36,421	-1.1%
<u>Disability Retirees</u>			
Number	1	1	0.0%
Average age (years)	47.91	46.91	2.1%
Total annual benefits	\$40,663	\$40,663	0.0%
Average annual benefit	\$40,663	\$40,663	0.0%
<u>Beneficiaries</u>			
Number	0	0	0.0%
Average age (years)	0.00	0.00	
Total annual benefits	\$0	\$0	
Average annual benefit	N/A	N/A	
<u>Participants Due Refunds</u>			
Number	2	3	-33.3%
Total Refunds Due	\$16,252	\$36,388	-55.3%

* Projected payroll for the upcoming valuation year

Table 16

Distribution of Male Active Members by Age and by Years of Service

Average Age = 36.6 Average Service = 7.3

Age Last Birthday		Whole Years of Service at Valuation Date							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
Less than 20	Count	-	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-	-
20-24	Count	7	-	-	-	-	-	-	7
	Avg. Salary	\$46,613	-	-	-	-	-	-	\$46,613
25-29	Count	5	1	-	-	-	-	-	6
	Avg. Salary	47,729	*	-	-	-	-	-	47,734
30-34	Count	4	1	-	-	-	-	-	5
	Avg. Salary	51,633	*	-	-	-	-	-	51,561
35-39	Count	3	3	2	-	-	-	-	8
	Avg. Salary	*	*	*	-	-	-	-	57,373
40-44	Count	-	-	-	2	-	-	-	2
	Avg. Salary	-	-	-	*	-	-	-	*
45-49	Count	-	1	-	2	1	-	-	4
	Avg. Salary	-	*	-	*	*	-	-	72,276
50-54	Count	-	-	-	-	-	1	-	1
	Avg. Salary	-	-	-	-	-	*	-	*
55-59	Count	-	-	-	3	-	-	-	3
	Avg. Salary	-	-	-	*	-	-	-	*
60-64	Count	1	-	-	-	-	-	-	1
	Avg. Salary	*	-	-	-	-	-	-	*
65-69	Count	-	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-	-
70 & Over	Count	-	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-	-
Totals	Count	20	6	2	7	1	1	-	37
	Avg. Salary	\$51,066	\$56,819	*	\$59,750	*	*	-	\$55,759

Average Salary represents annualized salary earned in 2017 and is not shown for cells with counts less than or equal to three participants

Table 17

Distribution of Female Active Members by Age and by Years of Service

Average Age = 49.3 Average Service = 21.7

Age Last Birthday		Whole Years of Service at Valuation Date						Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus
Less than 20	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
20-24	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
25-29	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
30-34	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
35-39	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
40-44	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
45-49	Count	-	-	-	-	1	-	1
	Avg. Salary	-	-	-	-	*	-	*
50-54	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
55-59	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
60-64	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
65-69	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
70 & Over	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
Totals	Count	-	-	-	-	1	-	1
	Avg. Salary	-	-	-	-	*	-	*

Average Salary represents annualized salary earned in 2017 and is not shown for cells with counts less than or equal to three participants

Table 18

Distribution of Total Active Members by Age and by Years of Service

Average Age = 37.0 Average Service = 7.7

Age Last Birthday		Whole Years of Service at Valuation Date						Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus
Less than 20	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
20-24	Count	7	-	-	-	-	-	7
	Avg. Salary	\$46,613	-	-	-	-	-	\$46,613
25-29	Count	5	1	-	-	-	-	6
	Avg. Salary	47,729	*	-	-	-	-	47,734
30-34	Count	4	1	-	-	-	-	5
	Avg. Salary	51,633	*	-	-	-	-	51,561
35-39	Count	3	3	2	-	-	-	8
	Avg. Salary	*	*	*	-	-	-	57,373
40-44	Count	-	-	-	2	-	-	2
	Avg. Salary	-	-	-	*	-	-	*
45-49	Count	-	1	-	2	2	-	5
	Avg. Salary	-	*	-	*	*	-	76,113
50-54	Count	-	-	-	-	-	1	1
	Avg. Salary	-	-	-	-	-	*	*
55-59	Count	-	-	-	3	-	-	3
	Avg. Salary	-	-	-	*	-	-	*
60-64	Count	1	-	-	-	-	-	1
	Avg. Salary	*	-	-	-	-	-	*
65-69	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
70 & Over	Count	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-
Totals	Count	20	6	2	7	2	1	38
	Avg. Salary	\$51,066	\$56,819	*	\$59,750	*	*	\$56,699

Average Salary represents annualized salary earned in 2017 and is not shown for cells with counts less than or equal to three participants

Table 19

Schedule of Pension Recipients Added to and Removed from Rolls

Fiscal Year Ending December 31	Added to Rolls*		Removed from Rolls		Total		Percent Increase in	Average
		Annual		Annual		Annual	Annual	Annual
	Count	Pension Benefits	Count	Pension Benefits	Count	Pension Benefits	Pension Benefits	Pension Benefit
2011	0	\$0	0	\$0	2	\$40,129	0.00%	\$20,065
2012	0	0	0	0	2	40,129	0.00%	20,065
2013	1	46,109	0	0	3	86,238	114.90%	20,065
2014	2	66,242	0	0	5	152,480	76.81%	30,496
2015	1	40,663	0	0	6	193,143	26.67%	32,191
2016	3	138,890	0	0	9	332,033	71.91%	36,893
2017	1	32,744	0	0	10	364,776	9.86%	36,478

* Includes cost-of-living increases

Table 20
Pensioners by Age

Average Age Male = 61.9

Average Age Female = 47.9

Average Age Total = 60.5

Age Last Birthday	Males	Females	Total
Under 50	0	1	1
50-54	1	0	1
55-59	3	0	3
60-64	2	0	2
65-69	2	0	2
70-74	1	0	1
75-79	0	0	0
80-84	0	0	0
85 & over	0	0	0
Total	9	1	10

Table 21
Pensioners by Option Code

Option Code**	Count			Monthly Benefit		
	Male	Female	Total	Male	Female	Total
1	3	1	4	*	*	\$13,256
2	4	-	4	8,887	-	8,887
2P	1	-	1	*	-	*
3	-	-	-	-	-	-
3P	1	-	1	*	-	*
4	-	-	-	-	-	-
5	-	-	-	-	-	-
Total	9	1	10	\$27,009	*	\$30,398
Beneficiaries	-	-	-	-	-	-
Grand Total	9	1	10	\$27,009	*	\$30,398

* Average benefit is not shown for cells with count less than or equal to three participants

** See Optional Forms of Payment in Appendix B

Table 22
Pensions Awarded in 2017

Average Age = 60.5

Males & Females								
Benefit Amount	1	2	2P	3	3P	4	5	Total
Under \$200	0	0	0	0	0	0	0	0
\$200-\$399	0	0	0	0	0	0	0	0
\$400-\$599	0	0	0	0	0	0	0	0
\$600-\$799	0	0	0	0	0	0	0	0
\$800-\$999	0	0	0	0	0	0	0	0
\$1,000-\$1,499	0	0	0	0	0	0	0	0
\$1,500-\$1,999	0	0	0	0	0	0	0	0
\$2,000-\$2,499	0	0	0	0	0	0	0	0
\$2,500 & over	0	1	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	1
Males & Females								
Age Last Birthday	1	2	2P	3	3P	4	5	Total
Under 50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	1	0	0	0	0	0	1
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85 & over	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	1

Table 23

Retirees and Disabled Members by Service at Retirement and Years Since Retirement

(Average Monthly Benefit)

Average Service at Retirement = 21.9 Average Years Since Retirement = 4.6

Service at Retirement		Years Elapsed Since Retirement							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
Less than 5	Count	-	-	-	-	-	-	-	-
	Avg. Benefit	-	-	-	-	-	-	-	-
5-9	Count	-	-	-	-	-	-	-	-
	Avg. Benefit	-	-	-	-	-	-	-	-
10-14	Count	-	-	-	-	-	-	-	-
	Avg. Benefit	-	-	-	-	-	-	-	-
15-19	Count	2	-	1	-	-	-	-	3
	Avg. Benefit	*	-	*	-	-	-	-	*
20-24	Count	4	-	-	1	-	-	-	5
	Avg. Benefit	\$3,319	-	-	*	-	-	-	\$3,010
25-29	Count	2	-	-	-	-	-	-	2
	Avg. Benefit	*	-	-	-	-	-	-	*
30-34	Count	-	-	-	-	-	-	-	-
	Avg. Benefit	-	-	-	-	-	-	-	-
35 & Over	Count	-	-	-	-	-	-	-	-
	Avg. Benefit	-	-	-	-	-	-	-	-
Totals	Count	8	-	1	1	-	-	-	10
	Avg. Benefit	\$3,382	-	*	*	-	-	-	\$3,040

Average benefit is not shown for cells with count less than or equal to three participants

Table 24
Retirees and Disableds by Year of Retirement

January 1, 2018 Total = 10

Year of Retirement	Count
Under 1998	0
1998	0
1999	0
2000	0
2001	0
2002	1
2003	0
2004	0
2005	0
2006	0
2007	1
2008	0
2009	0
2010	0
2011	0
2012	0
2013	1
2014	2
2015	1
2016	3
2017*	1

**May include retirements as of January 1, 2018*

Table 25
Thirty Year Projected Benefit Payments

Year Ending December 31	Actives	Retirees*	Total
2018	\$ 45,588	\$ 364,452	\$ 410,040
2019	58,703	362,545	421,248
2020	64,085	360,918	425,003
2021	83,516	359,177	442,693
2022	117,397	357,311	474,708
2023	149,426	355,308	504,733
2024	180,664	353,154	533,818
2025	221,295	350,836	572,131
2026	271,278	348,335	619,613
2027	319,704	352,494	672,199
2028	362,032	356,279	718,311
2029	396,914	353,105	750,020
2030	427,541	349,655	777,196
2031	452,471	345,898	798,369
2032	477,602	341,798	819,400
2033	506,334	337,320	843,654
2034	541,592	332,014	873,606
2035	586,239	343,822	930,061
2036	631,997	344,255	976,252
2037	674,886	337,703	1,012,589
2038	718,995	330,568	1,049,563
2039	766,170	322,824	1,088,994
2040	816,514	314,456	1,130,971
2041	862,770	305,464	1,168,234
2042	905,142	295,858	1,201,000
2043	951,748	284,487	1,236,236
2044	994,170	273,045	1,267,215
2045	1,037,792	261,491	1,299,283
2046	1,078,135	252,458	1,330,592
2047	1,111,123	243,310	1,354,433

* Includes Disabled Members, Beneficiaries, and Deferred Vested Members. Retirement benefit payments for deferred vested members are assumed to commence at age 60.

APPENDIX A

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2018 actuarial valuation report.

1. Valuation Date

The valuation date for any given year is January 1st, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percentage of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.
- d. The unfunded actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 30 years from the valuation date.

3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year).

The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

a. Investment return

7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

b. Salary increase rate

Service	Rate	Service	Rate
1	6.50%	14	3.50%
2	6.50%	15	3.25%
3	6.50%	16	3.25%
4	6.00%	17	3.25%
5	5.25%	18	3.25%
6	4.75%	19	3.00%
7	4.25%	20	3.00%
8	4.00%	21	2.75%
9	4.00%	22	2.75%
10	4.00%	23	2.75%
11	3.75%	24	2.75%
12	3.50%	25	2.50%
13	3.50%	25+	2.50%

c. Payroll growth rate

In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 2.50% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

d. Cost-of-Living adjustment

No cost-of-living adjustment is assumed since the policy for providing the benefit requires Board approval to make the recommendation to the Joint Appropriations Committee and the funded level of the plan shows a cost-of-living requirement would not be permitted.

5. Demographic Assumptions

a. Mortality

Healthy Pre-Retirement Mortality:

RP-2014 Combined Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Combined Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Disabled Mortality

RP-2014 Disabled Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2018 using Scale MP-2017					
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.05%	0.02%
25	0.05%	0.02%	0.06%	0.03%	0.20%	0.09%
30	0.05%	0.02%	0.09%	0.06%	0.51%	0.24%
35	0.06%	0.03%	0.13%	0.09%	0.91%	0.45%
40	0.06%	0.04%	0.19%	0.14%	1.31%	0.68%
45	0.09%	0.06%	0.27%	0.18%	1.63%	0.90%
50	0.16%	0.11%	0.39%	0.24%	1.94%	1.16%
55	0.27%	0.17%	0.56%	0.32%	2.28%	1.46%
60	0.47%	0.25%	0.78%	0.47%	2.68%	1.74%
65	0.83%	0.36%	1.11%	0.70%	3.19%	2.06%
70	1.35%	0.61%	1.64%	1.09%	3.94%	2.71%
75			2.58%	1.77%	5.23%	3.95%
80			4.31%	2.98%	7.38%	5.94%
85			7.50%	5.22%	10.97%	8.86%
90			13.21%	9.25%	16.82%	13.02%
95			21.17%	15.41%	23.94%	19.15%
100			30.66%	23.44%	31.90%	27.35%

b. Disability and Withdrawal

Age	Disability		Withdrawal	
	Male	Female	Ultimate	
			Male	Female
20	0.01%	0.01%	11.00%	10.00%
25	0.01%	0.01%	11.00%	10.00%
30	0.01%	0.01%	6.00%	6.00%
35	0.01%	0.01%	5.00%	5.00%
40	0.01%	0.01%	4.00%	5.00%
45	0.03%	0.03%	4.00%	5.00%
50	0.08%	0.08%	3.00%	4.00%
55	0.20%	0.20%	3.00%	4.00%
60	0.20%	0.20%	3.00%	4.00%

Withdrawal		
Service	First five years	
	Male	Female
1	22.00%	25.00%
2	18.00%	21.00%
3	14.00%	15.00%
4	13.00%	15.00%
5	13.00%	14.00%

65% of active disabilities are assumed to be duty-related

c. Retirement Rates

Age	Retirement	
	Unreduced	Reduced
<50	15.0%	1.0%
50	15.0%	0.5%
51	15.0%	0.5%
52	15.0%	0.5%
53	15.0%	0.5%
54	15.0%	0.5%
55	17.0%	1.0%
56	17.0%	1.0%
57	15.0%	1.0%
58	15.0%	1.0%
59	15.0%	2.5%
60	13.0%	2.5%
61	13.0%	2.5%
62	18.0%	2.5%
63	15.0%	2.5%
64	15.0%	2.5%
65	25.0%	
66	30.0%	
67	28.0%	
68	25.0%	
69	25.0%	
70	15.0%	
71	15.0%	
72	15.0%	
73	15.0%	
74	15.0%	
75	15.0%	
76	15.0%	
77	15.0%	
78	15.0%	
79	15.0%	
80+	100.0%	

6. Other Assumptions

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 60.
- f. No benefit amount data is available for members entitled to deferred benefits. The benefit is estimated using the final average compensation and service provided by WRS.
- g. There will be no recoveries once disabled.
- h. Administrative expenses: Assumed to be the average of the actual expenses for the prior two years, with each year projected at 2.50% to the valuation date.
- i. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- j. Decrement timing: Decrements of all types are assumed to occur mid-year.
- k. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- l. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- m. Benefit Service: All members are assumed to accrue one year of service each year. Exact fractional service is used to determine the amount of benefit payable.

APPENDIX B

SUMMARY OF PLAN PROVISIONS

Summary of Plan Provisions

Covered Members	Any employees covered by the Air Guard Firefighter Pension Plan (Air Guard Firefighters employees).
Final Average Salary	Employee's average annual salary for the highest paid three continuous years of service.
Service Retirement	
Eligibility	Age 60 with four or more years of service or age 50 with 25 or more years of service. All employees are eligible for a reduced benefit at age 50 with four or more years of service or any age with 25 or more years of service.
Monthly Benefit	2.50% of employee's Final Average Salary for each year of credited service. This amount is reduced by 5.0% per year that the employee is under age 60. However, members who are at least age 55 retiring with a combined age and service of at least 75 receive an unreduced benefit.
Vesting	Any employee who has left employment with four or more years of service, and who has not withdrawn accumulated contributions, is eligible to receive the above benefit or can elect to receive a lump-sum refund of contributions with interest. An employee who terminates with less than four years of service is only eligible for the lump-sum benefit.
Duty Disability Benefit	
Eligibility	No age or service eligibility requirements.
Benefit	65% of salary as of the date of disability, payable immediately.
Non-Duty Disability Benefit	
Eligibility	Ten or more years of service.
Benefit	65% of salary as of the date of disability, payable immediately.
Pre-retirement Death Benefit	
Eligibility	No age or service requirements.
Benefit	A lump sum equal to two times the employee contributions with interest. If the employee is vested, the beneficiary can elect, in lieu of this lump sum, to receive a monthly annuity equal to the actuarial equivalent of the retirement benefit that would be due the employee.
Contributions	
Employee	16.65% of salary.
Employer	7.12% of salary.
Interest	3.00% annually.

Cost-of-Living Improvements

W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change.

Optional Forms of Payment

Option 1	Monthly benefit for life with a lump-sum death benefit equal to the excess (if any) of the employee contributions with interest over the total benefits received.
Option 2	Monthly benefit for life. Upon death, 100% of the benefit continues to be paid to the beneficiary.
Option 2P	Monthly benefit for life. Upon death, 100% of the benefit continues to be paid to the beneficiary. Benefit reverts to Option 1 amount but without the cash refund feature upon beneficiary death.
Option 3	Monthly benefit for life. Upon death, 50% of the benefit continues to be paid to the beneficiary.
Option 3P	Monthly benefit for life. Upon death, 50% of the benefit continues to be paid to the beneficiary. Benefit reverts to Option 1 amount but without the cash refund feature upon beneficiary death.
Option 4	Monthly benefit for life with a guarantee of 120 monthly payments.
Option 5	The largest possible monthly benefit payable for life with no lump-sum death benefit.